

CLAIMS

- 1 1. A method for resynchronizing a link state database (LSDB) of a non-stop forwarding
2 (NSF) router with a LSDB of a neighbor while maintaining an existing adjacency with
3 the neighbor over an interface of the NSF router that was established before a software
4 reload on the NSF router, the method comprising the steps of:
5 establishing a fake adjacency with the neighbor over the interface of the NSF
6 router used for the existing adjacency with the neighbor;
7 maintaining the existing adjacency between the NSF router and the neighbor over
8 the interface; and
9 allowing the NSF router to continue receiving and forwarding data packet traffic
10 over the existing adjacency.

- 1 2. The method of Claim 1 further comprising the step of using the fake adjacency to ex-
2 change the LSDB between the neighbor and NSF router.

- 1 3. The method of Claim 1 further comprising the steps of:
2 transitioning a finite state machine (FSM) of the neighbor from an ExStart state to
3 a Full state;
4 sending an empty database description packet from the NSF router to the neighbor
5 over the fake adjacency to ensure that the neighbor does not request any link state ac-
6 knowledgement packets over the fake adjacency; and
7 upon the neighbor FSM reaching the Full state, dropping the fake adjacency.

- 1 4. The method of Claim 3 wherein the step of dropping comprises the step of sending
2 one of empty Hello packets and no Hello packets from the NSF router over the fake adja-
3 cency.

- 1 5. The method of Claim 4 wherein the interface is a broadcast interface and wherein the
2 step of establishing comprises the step of using a secondary router identifier (ID) of the

3 NSF router as a new router ID and a secondary Internet protocol (IP) address of the NSF
4 router as a source IP address of a packet.

1 6. The method of Claim 5 further comprising the steps of:
2 sending Hello packets from the NSF router to the neighbor as both the NSF router
3 and as a new router over the broadcast interface;
4 creating a neighbor data structure for the fake adjacency at the neighbor in re-
5 sponse to receiving Hello packets from the new router;
6 synchronizing the LSDBs between the neighbor and new router; and
7 realizing the existing and fake adjacencies at the neighbor.

1 7. Apparatus for resynchronizing a link state database (LSDB) of a non-stop forwarding
2 (NSF) router with a LSDB of a neighbor while maintaining an existing adjacency with
3 the neighbor over an interface of the NSF router that was established before a software
4 reload on the NSF router, the apparatus comprising:
5 means for establishing a fake adjacency with the neighbor over the interface of
6 the NSF router used for the existing adjacency with the neighbor;
7 means for maintaining the existing adjacency between the NSF router and the
8 neighbor over the interface; and
9 means for allowing the NSF router to continue receiving and forwarding data
10 packet traffic over the existing adjacency.

1 8. The apparatus of Claim 7 further comprising means for exchanging the LSDB be-
2 tween the neighbor and NSF router.

1 9. The apparatus of Claim 7 further comprising:
2 means for transitioning a finite state machine (FSM) of the neighbor from an Ex-
3 Start state to a Full state;

4 means for sending an empty database description packet from the NSF router to
 5 the neighbor over the fake adjacency to ensure that the neighbor does not request any link
 6 state acknowledgement packets over the fake adjacency; and
 7 upon the neighbor FSM reaching the Full state, means for dropping the fake adja-
 8 cency.

1 10. The apparatus of Claim 9 wherein the means for dropping comprises means for send-
 2 ing one of empty Hello packets and no Hello packets from the NSF router over the fake
 3 adjacency.

1 11. The apparatus of Claim 10 wherein the interface is a broadcast interface.

1 12. The apparatus of Claim 11 further comprising:

2 means for sending Hello packets from the NSF router to the neighbor as both the
 3 NSF router and as a new router over the broadcast interface;

4 means for creating a neighbor data structure for the fake adjacency at the neighbor
 5 in response to receiving Hello packets from the new router; and

6 means for synchronizing the LSDBs between the neighbor and new router.

1 13. A computer readable medium containing executable program instructions for resyn-
 2 chronizing a link state database (LSDB) of a non-stop forwarding (NSF) router with a
 3 LSDB of a neighbor while maintaining an existing adjacency with the neighbor over an
 4 interface of the NSF router that was established before a software reload on the NSF
 5 router, the executable program instructions comprising program instructions for:

6 establishing a fake adjacency with the neighbor over the interface of the NSF
 7 router used for the existing adjacency with the neighbor;

8 maintaining the existing adjacency between the NSF router and the neighbor over
 9 the interface; and

10 allowing the NSF router to continue receiving and forwarding data packet traffic
 11 over the existing adjacency.

1 14. The computer readable medium of Claim 13 further comprising program instructions
2 for using the fake adjacency to exchange the LSDB between the neighbor and NSF
3 router.

1 15. The computer readable medium of Claim 13 further comprising program instructions
2 for:

3 transitioning a finite state machine (FSM) of the neighbor from an ExStart state to
4 a Full state;

5 sending an empty database description packet from the NSF router to the neighbor
6 over the fake adjacency to ensure that the neighbor does not request any link state ac-
7 knowledgement packets over the fake adjacency; and

8 upon the neighbor FSM reaching the Full state, dropping the fake adjacency.

1 16. The computer readable medium of Claim 15 wherein the program instruction for
2 dropping comprises the program instruction for sending one of empty Hello packets and
3 no Hello packets from the NSF router over the fake adjacency.

1 17. The computer readable medium of Claim 16 wherein the interface is a broadcast in-
2 terface and wherein the program instruction for establishing comprises the program in-
3 struction for using a secondary router identifier (ID) of the NSF router as a new router ID
4 and a secondary Internet protocol (IP) address of the NSF router as a source IP address of
5 a packet.

1 18. The computer readable medium of Claim 17 further comprising program instructions
2 for:

3 sending Hello packets from the NSF router to the neighbor as both the NSF router
4 and as a new router over the broadcast interface;

5 creating a neighbor data structure for the fake adjacency at the neighbor in re-
6 sponse to receiving Hello packets from the new router;

7 synchronizing the LSDBs between the neighbor and new router; and

8 realizing the existing and fake adjacencies at the neighbor.

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